**T04D01 – Ionic Bonding**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List the common elements or polyatomic ions that hold each charge:

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| --- | --- | --- | --- | --- | --- |
| **X+** | **X2+** | **X3+** | **Y3-** | **Y2-** | **Y-** |
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1. Why must an ionic compound contain both an anion and a cation?
2. Explain, using an example why the formula of a compound containing X2+ and Y3- forms a formula of X3Y2.
3. Show (in your own way) the transfer of electrons from one atom to another using Pb4+ and O2- as your example when they bond in an ionic fashion. Be sure to include the electron configuration in your explanation.
4. What determines whether a compound will be covalent or ionic in nature? There are two methods, one being very specific and the other being a bit more general. Justify your answer.
5. Can a compound be partially ionic and partially covalent in nature?
6. In the first unit we jumped ahead and learned ionic nomenclature, give the rules and use examples for the naming of all types of ionic compounds. (Use at least 3-4 examples for each kind).
7. What are the properties of ionic compounds? How could you test these against covalent compounds? Set up an experiment that will allow you to test the properties of melting point, boiling point, structure, conductivity, and solubility. Be specific and practice your design development.